

of water from the water-confirmed area with a litmus paper or pH meter, determining that the source of the water is not rain if the water is not relatively acidic. Alternatively, the source of the water in the water-confirmed area of the structure 16 can be determined by sensing the salinity of water from the water-confirmed area with a salinity meter, for example, determining that the water-confirmed area is due to ground water if the water is relatively saline, and determining that the water-confirmed area is not due to ground water if the water is not relatively saline. As another alternative, the generator 12 and the sensor unit 14 can be used, for example, in the performance of the method set forth later in this document with reference to Figs. 7, 8A and 8B to determine whether the source of the water in the water-confirmed area of the structure is ground water.

After performance of step S16, or if the determination of either of steps S12 [of] or S15 are negative, the method of Figs. 5A and 5B ends in step S17. Steps S1-S13 can be performed either by the processor 28, the computer [3 6] 36 or a human user of the method of Figs. 5A and 5B. Steps S14-S17 of Figs. 5A and 5B can be performed by a human user of the method using appropriate equipment and techniques such as those previously described..

IN THE CLAIMS:

Please delete claims 16 and without prejudice to the subject matter therein. Please amend claims as follows:

8. (Twice Amended) A method comprising the steps of:

- a) exposing with a generator a predetermined area of a structure with first electromagnetic radiation including at least one predetermined wavelength that is significantly absorbed by water;

- b) sensing with a sensor unit second electromagnetic radiation from the structure, the second electromagnetic radiation emitted by or transmitted through the predetermined area of the structure and based on the first electromagnetic radiation; and
- c). determining whether the water exists in the structure, based on the second radiation sensed in step (b), the predetermined area of the structure exposed in said step (a) being at least one square meter.

10. (Twice Amended) A method comprising the steps of:

- a) exposing with a generator a predetermined area of a structure with [the] first electromagnetic radiation including at least one predetermined wavelength that is significantly absorbed by water;
- b) sensing with a sensor unit second electromagnetic radiation from the structure, the second electromagnetic radiation based on the first electromagnetic radiation;
- c) determining whether a water-suspect area exists in the structure, based on the second radiation sensed in step (b);
- d) if said step (c) determines that [a] the water-suspect area exists in the structure, contactingly testing the water-suspect area using at least one of a moisture detector, [a capacitance meter,] an endoscopic probe, and a resistivity meter; and
- e) determining whether water is present in the structure, based on the testing of said step (d).

12. (Twice Amended) A method comprising the steps of:

- a) exposing with a generator a predetermined area of a structure to electromagnetic radiation including at least one predetermined exposure wavelength significantly absorbed by water, and at least one predetermined reference wavelength that is not significantly absorbed by water;
- b) sensing with a sensor unit electromagnetic radiation from the exposed predetermined area of the structure at a predetermined detection wavelength that is sensitive to the exposure wavelength if water is present in the exposed predetermined area of the structure, and that is not sensitive to the exposure

wavelength if water is not present in the exposed predetermined area of the structure, and at the reference wavelength;

- c) determining whether the exposed predetermined area of the structure includes a water-suspect area, based on the electromagnetic radiation sensed in said step (b) at the detection and reference wavelengths;
- d) if said step (c) determines that a water-suspect area exists in the structure, non-contactingly testing the water-suspect area using at least one of [a moisture detector,] a capacitance meter, infrared inspection and a moisture detection method including a step of changing a temperature of the structure [, an endoscopic probe, and a resistivity meter; and]
- e) determining whether water is present in the structure, based on the testing of said step (d); and
- f) if water is present in the water-suspect area, determining the source of the water using at least one of a litmus paper, a pH meter, and a salinity meter.

18. (Twice Amended) A method comprising the steps of:

- a) generating with a generator electromagnetic radiation including at least one predetermined exposure wavelength that is both significantly absorbed by water and is not significantly absorbed by material composing the structure, and at least one predetermined reference wavelength that is [not] neither significantly absorbed by water [and] nor the material composing the structure;
- b) exposing with the generator a predetermined area of the structure with the generated electromagnetic radiation;
- c) sensing with a sensor unit at least a portion of the generated radiation from the exposed area of the structure to determine a first intensity level of the radiation at the exposure wavelength, and a second intensity level at the reference wavelength;
- d) comparing the first and second intensity levels;

- e) determining that the [water-suspect] predetermined area includes water if the first and second levels differ by at least a predetermined amount; and
- f) determining that the [water-suspect] predetermined area includes no water if the first and second levels do not differ by at least the predetermined amount.

24. (Once Amended) A method as claimed in claim [22] 18, wherein the generator produces the radiation used to expose the structure with a power of between ten [(10)] and one-thousand [(1,000)] Watts.

25. (Once Amended) A method as claimed in claim [22] 18, wherein the generator is supported in a fixed position during the performance of said step (b) with a photographic stand.

27. (Once Amended) A method as claimed in claim [26] 18, wherein the sensor unit includes a spectrometer.

28. (Once Amended) A method as claimed in claim [26] 18, wherein the sensor unit includes a spectroradiometer.

29. (Once Amended) A method as claimed in claim [26] 18, wherein the sensor unit includes a hyperspectral imaging system.

31. (Twice Amended) A method as claimed in claim 18, wherein the reference wavelength includes at least one of wavelengths at about 1.06 and 1.66 [nanometers] micrometers, such wavelengths not significantly absorbed by water.

51. (Once Amended) A method as claimed in claim 18 [17], wherein the predetermined area of the structure exposed in said step (b) is at least one square meter.

52. (Once Amended) A method as claimed in claim 18 [17], wherein the structure is a house.